

STATUS OF THE CLAIMS

1. (Currently Amended) A process for oxidising a substrate wherein said substrate is limonene or pinene or an acyclic or cyclic sesquiterpene, or a substituted derivative thereof, with the proviso that:

the substituent is not a halogen, and the substituent does not comprise an oxygen atom,

and wherein the process comprises: oxidizing said substrate with a mutant haem-containing enzyme, wherein the enzyme is selected from the group consisting of:

- (a) a P450_{cam} variant enzyme corresponding to SEQ ID NO: 1, comprising a mutation at one or more of the following amino acid positions : 87, 96, 98, 101, 185, 244, 247, 248, 295, 296, 395 or 396,
- (b) a P450_{BM-3} variant enzyme corresponding to SEQ ID NO: 24, comprising a mutation at one or more of the following amino acid positions: 42, 47, 51, 75, 181, 263, 264 or 354, and
- (c) a P450 monooxygenase homologue variant enzyme with at least 90% sequence homology with SEQ ID: 1 or SEQ ID:24 comprising one or more mutations at amino acid positions which are (i) equivalent to amino acid positions 87, 96, 98, 101, 185, 244, 247, 248, 295, 296, 395 or 396 of P450_{cam} enzyme corresponding to SEQ ID NO: 1, or (ii) equivalent to amino acid positions 42, 47, 51, 75, 181, 263, 264 or 354 of P450_{BM-3} enzyme corresponding to SEQ ID NO: 24,

wherein said mutations in (a), (b), or (c) are a substitution of an amino acid by an amino acid with a less polar side-chain.

2. (Previously Presented) The process according to claim 1 in which the enzyme is a mutant of P450_{cam} or P450_{BM-3}.
3. (Previously Presented) The process according to claim 2 in which the enzyme is one in which amino acid 47 and/or 51 of P450_{BM-3}, or amino acid 96 of P450_{cam}, have been changed to an amino acid with a less polar side-chain.

4. (Cancelled)
5. (Previously Presented) The process according to claim 1 in which the enzyme is (i) P450_{cam} and comprises one or more of the following mutations: F87W, F87I, F87L, T185L, T185F, V247A, V247L or F87A-I395F; or (ii) P450_{BM-3} and comprises the mutation R47L-Y51F.
- 6.-20. (Cancelled)
21. (Cancelled)
22. (Previously Amended) The process according to claim 21 in which the substrate is selected from the group consisting of limonene, and pinene; and substituted derivatives thereof.
23. (Previously Presented) The process according to claim 1 in which the substrate is a sesquiterpene.
24. (Previously Presented) The process according to claim 23 in which the substrate is selected from the group consisting of aromadendrene, carophyllene, longifolene, valencene, isobazzanene, silphinene, ishwarane, isopatchchoul-3-ene and isosesquicarene; and substituted derivatives thereof.